

INTRODUCTION

The earth's surface appears to be warming as a result of the accumulation of greenhouse gases from myriad sources worldwide. None of the emitters of these gases currently pays the cost to others of the adverse effects of warming. No individual firm, nor any single country, has an incentive to reduce emissions sufficiently to protect the global environment against climate change. Each has an economic incentive to "free ride" on the efforts of others. Without an international agreement limiting emissions abroad, even if one country sharply reduces its emissions unilaterally, greenhouse gas emissions from all other countries would continue to grow, and the risks posed by climate change would not be significantly reduced. The complex nature of the climate change problem requires global cooperation and a long-term solution.

In June of 1992, the Framework Convention on Climate Change, the first international agreement to address the risks of climate change, was signed during the Earth Summit in Rio de Janeiro. This treaty, ratified by the United States with the advice and consent of the Senate in October 1992, established the following ultimate objective:

“[To achieve] stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner” (Framework Convention on Climate Change, Article 2).

The Framework Convention laid the foundation for international cooperation to reduce emissions of greenhouse gases. The treaty encouraged industrial countries to return their greenhouse gas emissions to their 1990 levels by 2000.

Since the Framework Convention entered into force, the world's scientists have continued to warn of the potential negative environmental and economic effects of climate change. In 1995, the Intergovernmental Panel on Climate Change (IPCC), jointly established by the World Meteorological Organization and the United Nations Environment Programme, and representing the work of more than 2,000 scientists, concluded that “the balance of evidence suggests that there is a discernible human influence on global climate” (Houghton et al. 1996, p. 5). Without measures to abate the expected increase in greenhouse gas emissions over the next century, the IPCC

projected that average global temperatures would increase by 1.8 to 6.3° F (1 to 3.5° C), resulting in coastal damage from rising sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity.

To address these climate change risks better and to build on the existing treaty, approximately 160 countries met in Kyoto, Japan in December of 1997 and agreed to take substantial steps toward meeting the Convention's ultimate objective. The Kyoto Protocol, which requires the advice and consent of the Senate, would place binding limits on industrial countries' emissions of the six principal types of greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). The Protocol embraces several flexible, market-based approaches to allow for the emissions targets to be achieved at least cost. While the Protocol includes some participation by developing countries -- for example, through the Clean Development Mechanism¹ -- it does not currently include adequate participation by key developing countries, and the Administration is working to promote such participation.

The Administration will continue its efforts to promote meaningful participation by key developing countries and will work for effective implementation rules for international trading, the Clean Development Mechanism, and joint implementation. The risks of climate change are global and thus they require a global effort. The President will not submit the Kyoto Protocol to the Senate for advice and consent until key developing countries agree to participate meaningfully.

Independent of the agreement reached in Japan, the Administration has proposed a suite of measures to reduce emissions domestically.

- Corresponding to the first stage of the three stage domestic strategy that the President announced in October 1997, the Administration has proposed a five-year, \$6.3 billion package of tax incentives and R&D investments to improve energy efficiency and spur the development of renewable energy; commenced a set of consultations with our energy-intensive sectors aimed at achieving voluntary agreements on reducing greenhouse gas emissions; submitted a proposal for electricity restructuring that will reduce greenhouse gas emissions; and commenced an intensive review of how to improve the Federal government's own energy use and procurement.

¹ For a discussion of the Clean Development Mechanism, see p. 35.

Complementing these measures are the second and third stages of the Administration's plan that would be implemented subsequent to ratification of the Kyoto Protocol.

- The second stage will include a review of our program and an evaluation of the next steps as we prepare for a market-based trading system for greenhouse gas emissions. The details of the domestic trading system would be refined and possibly tested.
- In the final stage (2008-2012), emissions reductions would occur through a domestic trading program, integrated with international flexibility mechanisms, including international trading of emissions allowances, the Clean Development Mechanism, and joint implementation.

The international agreement that was reached in Kyoto this past December is a crucial step forward in addressing global climate change. But it is only one step in a journey. Since the international effort to reduce greenhouse gas emissions is still in some respects a work-in-progress, it is not yet possible to provide a full authoritative analysis of it. However, key elements of the Kyoto Protocol and the Administration's policy, such as international emissions trading, meaningful developing country participation, inclusion of carbon sinks and six categories of gases, as well as domestic initiatives, can ensure that reductions in global greenhouse gas emissions are consistent with continued strong economic growth.

This report provides the reasoning underlying the Administration's conclusion that, with the flexibility represented by key provisions of the Kyoto agreement, and through the pursuit of sound economic policies, the economic impacts of complying with the Kyoto Protocol are likely to be modest. First, the report provides a discussion of trends in greenhouse gas emissions, both in the United States and internationally. Second, it presents a brief survey of the scientific literature on the risks of climate change. Third, it provides an overview of the Kyoto Protocol, with emphasis on its flexibility mechanisms, and the evidence in the economic literature for cost-savings through these mechanisms. Fourth, it describes the methodology used to provide illustrative cost estimates of the Administration's policy to address climate change and presents the results of this illustrative cost analysis. In addition, it discusses important elements -- such as the benefits of mitigation and the potential impact of domestic policies -- that are not factored into the model used in our illustrative cost analysis.

